ICT in Schools:
Looking back – Looking forward

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Professor of Education (Futures), The Open University

Lancaster University, 9th March 2016

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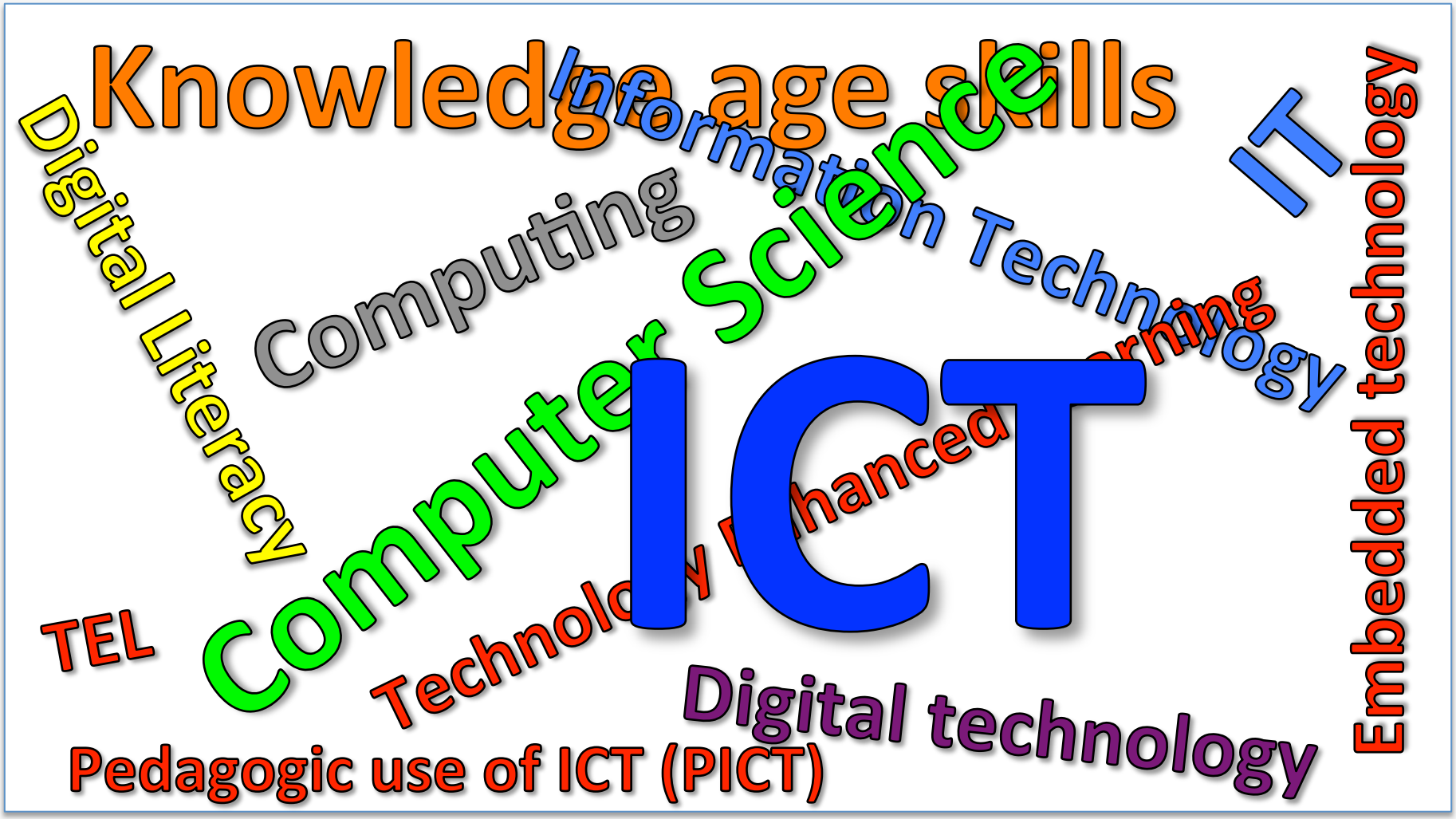
Confusion re terminology



Definitions

Knowledge age skills

Computing

- Computer Science
- Information Technology (IT)
- Digital Literacy

Pedagogic use of ICT (PICT)

- Embedded Technology
- Technology Enhanced Learning (TEL)

ICT ≈ Digital technology

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Originally adapted from Royal Society's 2012 Report on Computing in Schools (http://is.gd/UEObak)

Descriptions precede explanations, but …

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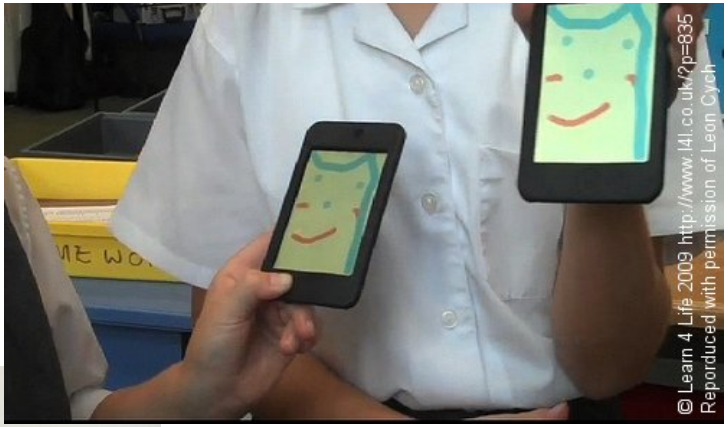


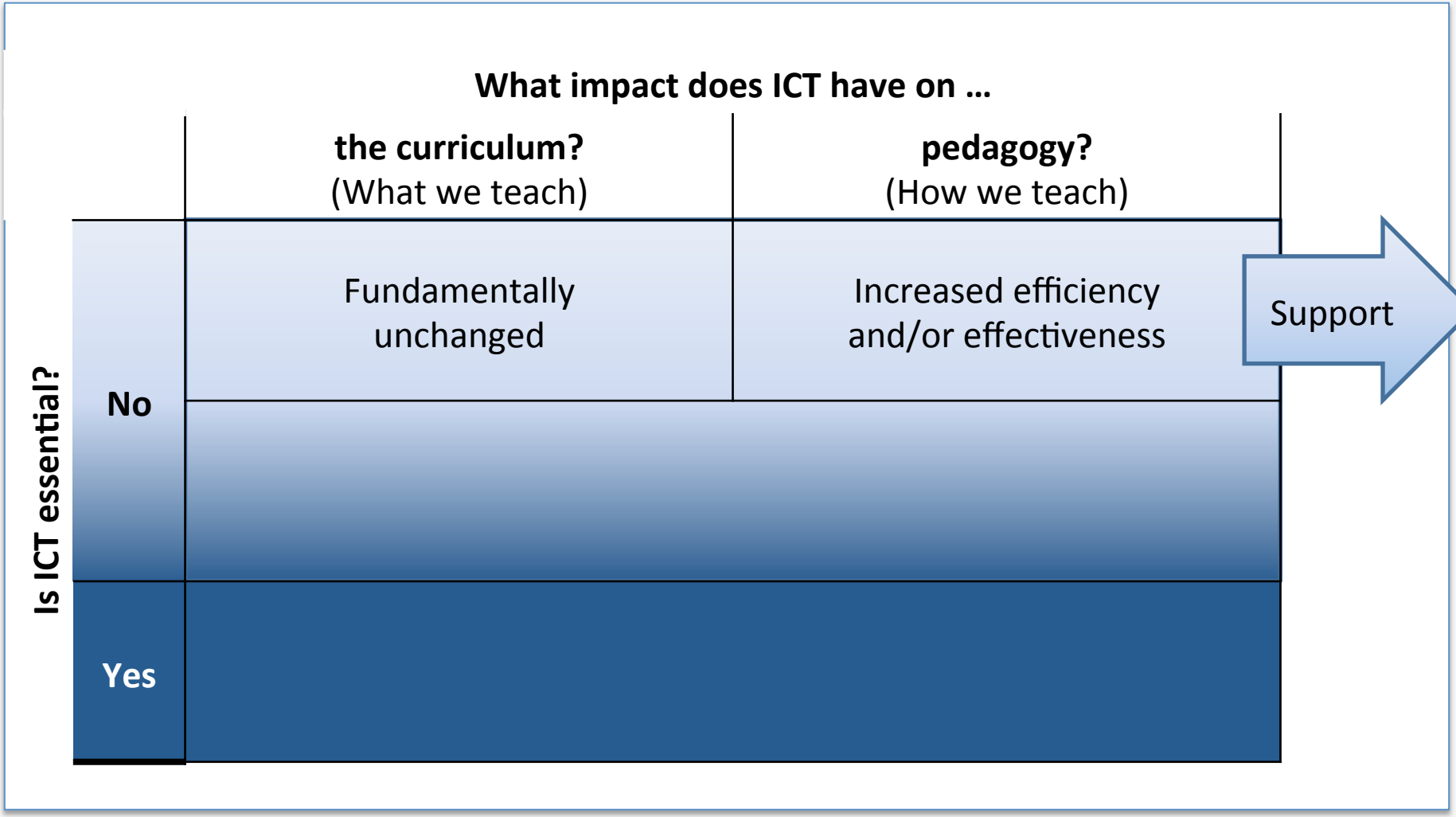
Impact?

What impact does ICT have on …

	the curriculum? (What we teach)	**pedagogy?** (How we teach)
Is ICT essential?		

Twining, P. (2014). Unpacking ICT. In: Cremin, T. & Arthur, J. (Eds.)
The handbook of teaching in the primary school. 3rd Edition. London: Routledge, pp. 514-526.

How do you describe PICT & its impacts



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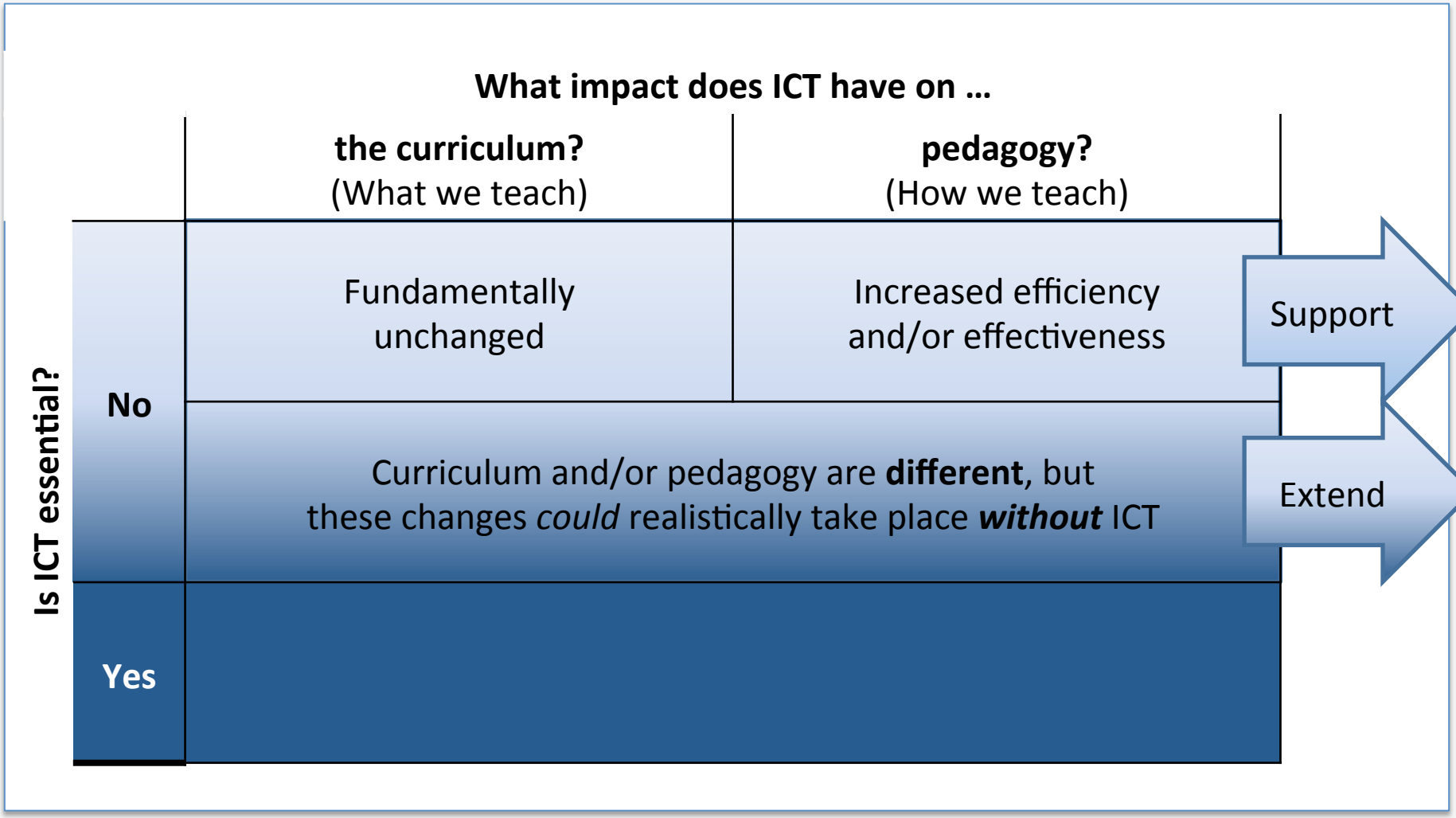

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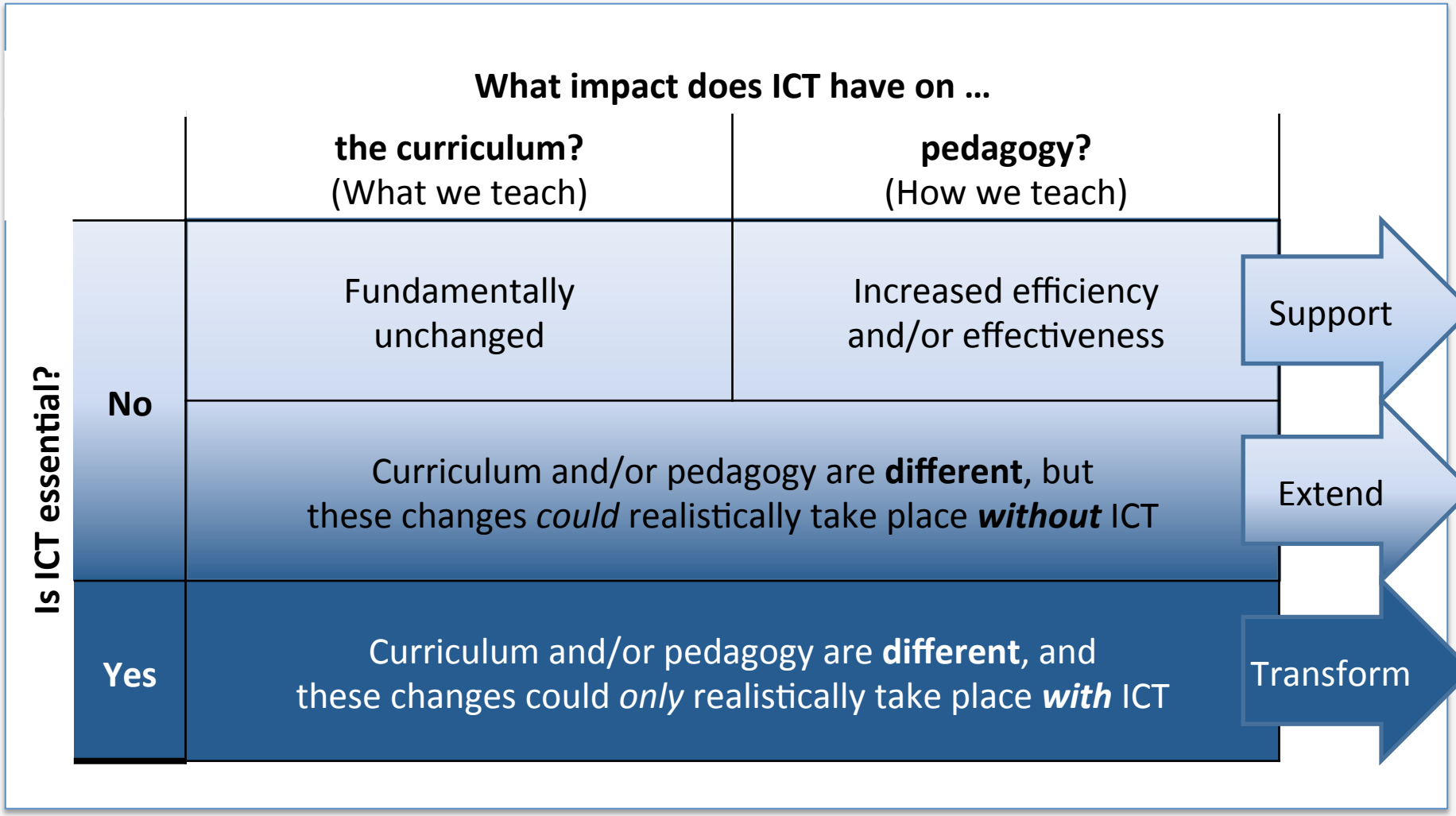

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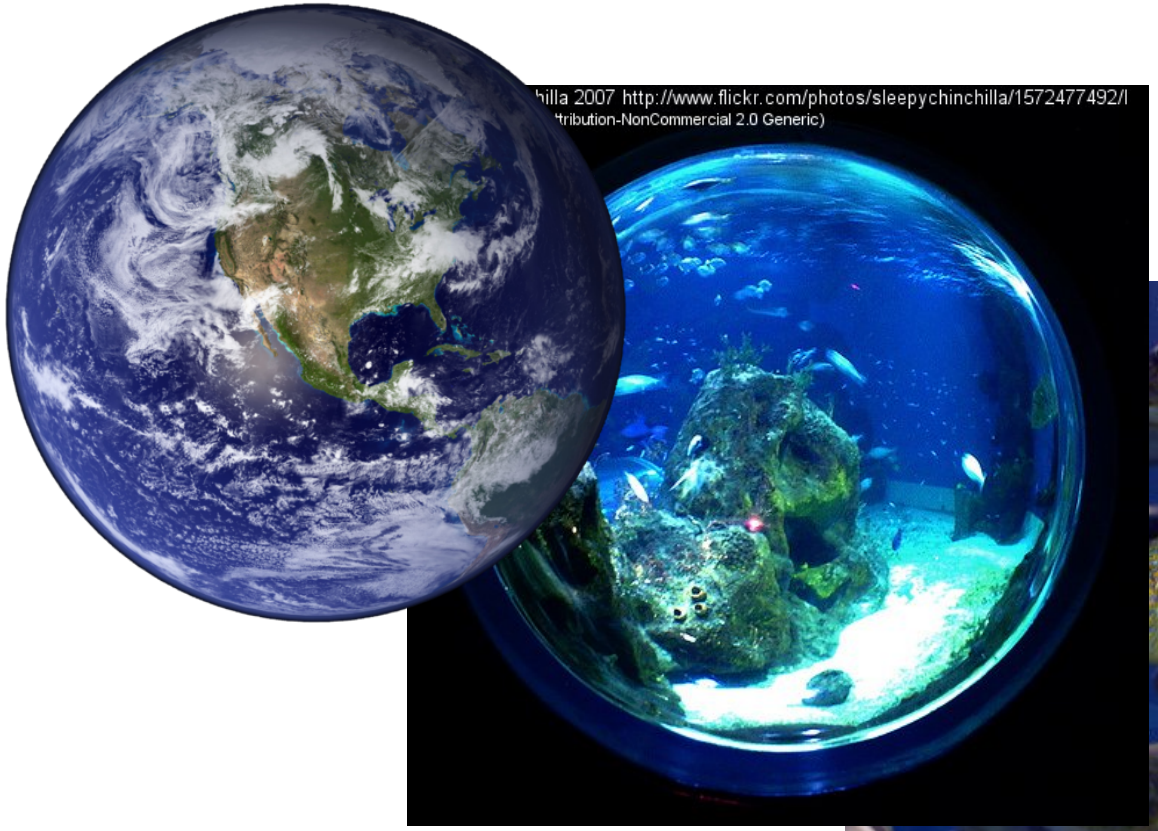
Dimensions as descriptions?

Support	Extend	Transform



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Vital Studies Snapshot Studies

Focus, 'Context' & 'Sampling'

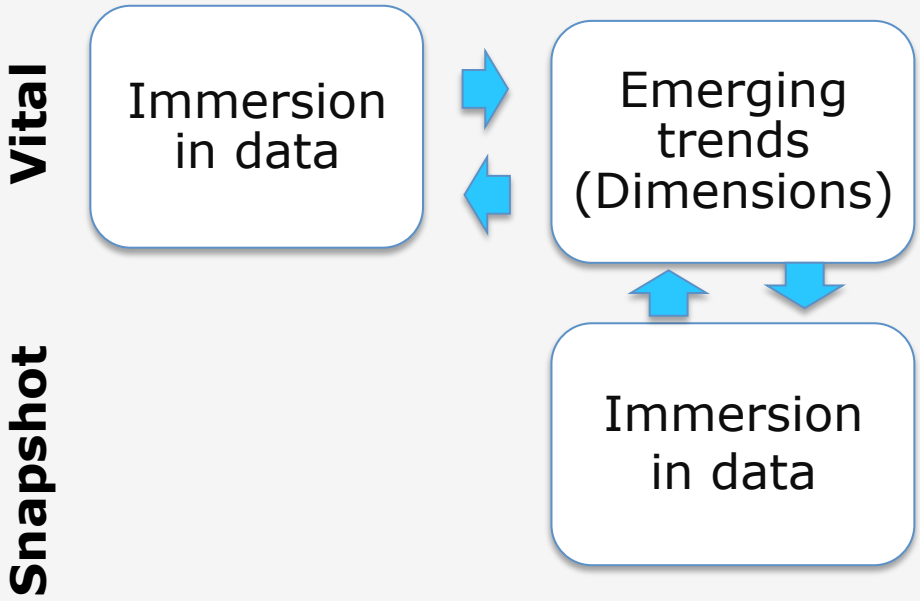
	Focus	'Context'	'Sampling'
Vital Snapshot	Digital technology strategies	22 Schools England 13 Schools Australia	Schools - Purposive sampling (Patton, 1990) Participant selection model, (Cohen, Manion, & Morrision, 2000)

Data collection

	Pre	Day 1	Between	Day 2
Vital	• Consent • Questionnaires	• SMT interview • T + P briefings • Class A: Int, Obs, Debrief, Group Int	• T + P portfolios	• Portfolio interviews • Class B (as Class A) • ICT Coord interview
Snapshot	• Consent • Questionnaires	• SMT Interview • Carer interview • ICT Coord Interview • Class A: Int, Obs, Debrief, Group Int		

Data analysis

Emergent Themes Analysis (ETA) Wong and Blanford (2002)



Dimensions

Support			Extend			Transform
Desktop		Laptop		Tablet		Tablet +
'School'			Subsidised	Hybrid		Home
Lab	Group sets	Class sets	1:1 loan	1:1 owned	BYOx	BYO
Wired		Wireless: closed		Wireless: controlled		Wireless: open
'Learning technology'						Consumer devices
'Local' Servers			VLE		Cloud	Cloud +
Internal		External (staff)		External (registered)		Public
ICT teachers		Dedicated technology team		Digital Leaders		Manage YOT
Formal CPD			Informal CPD			Learning organisation
Traditional			Independent & personalised learning			Pupils teach
Sage on the stage			Collaborative resource designer & Guide on the side			Co-learner
Teacher assessment			Reflection			Peer assessment
Product						Process
School to home		Hidden		Recognised	Valued	Impacting
None	Technology		Apple pie		21st Century	Educational

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Data analysis

Vital

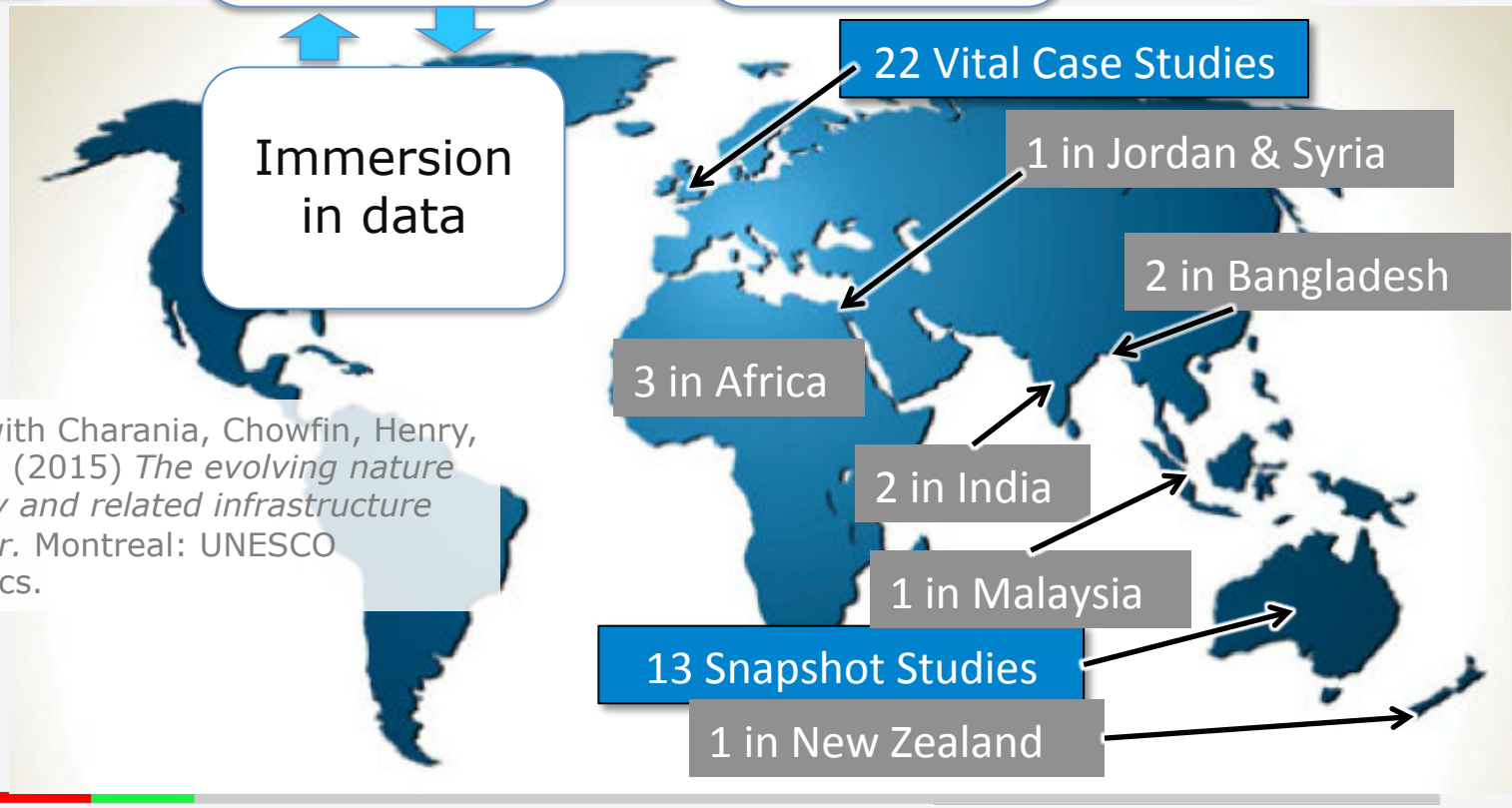
Immersion in data

Emerging trends (Dimensions)

Tested across contexts

Snapshot

Immersion in data



Twining & Davies, with Charania, Chowfin, Henry, Nordin & Woodward (2015) *The evolving nature of digital technology and related infrastructure for the school sector.* Montreal: UNESCO Institute for Statistics.

Snapshot Study 1

New state secondary school – Yr8

'Computer lab' in every classroom

Keyboards are essential

Moving to eTextbooks (?)

~~Support~~

Devices not up to expectations
⇨ Stick to tried & tested devices

Sustainability a huge challenge

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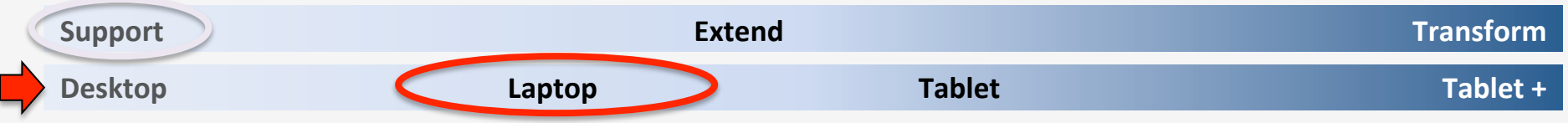
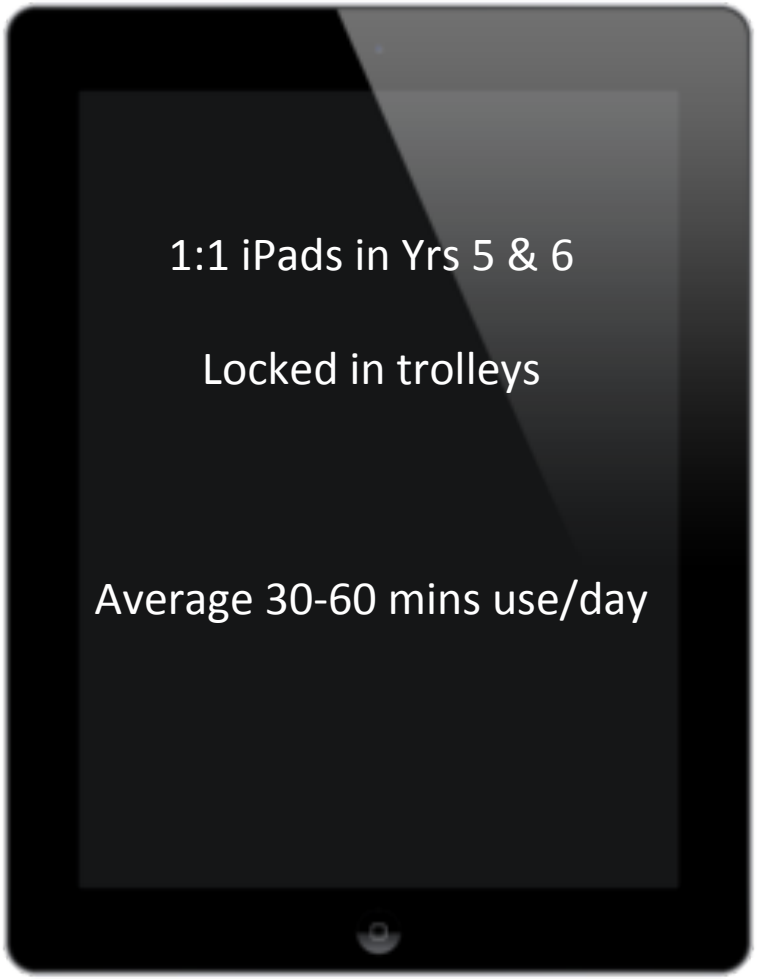
What device?



Case Study 6



Large 3-11 primary school
Enthusiastic ICT coordinator

Several 1:1 projects since 2008

Support

Pupils very good at ICT

Significant positive impact for a child on autistic spectrum

Less photocopying

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Provision

Support		Extend				Transform
Desktop		Laptop	Tablet			Tablet +

Lab	Group sets	Class sets	1:1 loan	1:1 owned	BYOx	BYO

Ownership matters

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Funding (who pays?)

Support			Extend			Transform
Desktop		Laptop		Tablet		Tablet +
‘School’			Subsidised	Hybrid		Home
Lab	Group sets	Class sets	1:1 loan	1:1 owned	BYOx	BYO

Traditionally

Allowed to be used in school

'School'

Home

1:1 schemes

Allowed to be used in school

'School'

Home

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BYO

Allowed to be used in school

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Paul Styles, St Helens College

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Funding (who pays?)

Support			Extend			Transform
Desktop		Laptop		Tablet		Tablet +
‘School’			Subsidised	Hybrid		Home
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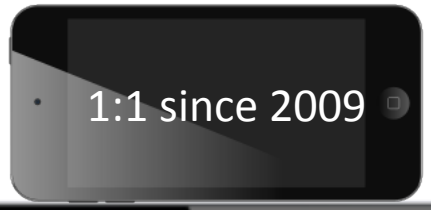
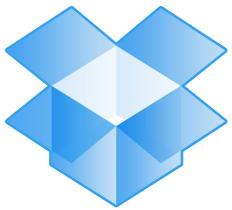
Case Study 3





11-16 Academy – new build
Charismatic head
Educational vision
enabled by technology

Transform

Significantly improved GCSE results since 2009

But …

'New forms of understanding knowledge and learning don't quite fit with current assessment methods' (Yr11)

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Tech model

Support			Extend			Transform
Desktop		Laptop		Tablet		Tablet +
'School'			Subsidised	Hybrid		Home
Lab	Group sets	Class sets	1:1 loan	1:1 owned	BYOx	BYO
Wired		Wireless: closed		Wireless: controlled		Wireless: open
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'Local' Servers			VLE		Cloud	Cloud +
Internal		External (staff)		External (registered)		Public

Teacher role

Support			Extend			Transform
Desktop		Laptop		Tablet		Tablet +
'School'			Subsidised	Hybrid		Home
Lab	Group sets	Class sets	1:1 loan	1:1 owned	BYOx	BYO
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'Local' Servers			VLE		Cloud	Cloud +
Internal		External (staff)		External (registered)		Public

Sage on the stage	Collaborative resource designer & Guide on the side	Co-learner

Student role

Support			Extend			Transform
Desktop		Laptop		Tablet		Tablet +
'School'			Subsidised	Hybrid		Home
Lab	Group sets	Class sets	1:1 loan	1:1 owned	BYOx	BYO
Wired		Wireless: closed		Wireless: controlled		Wireless: open
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'Local' Servers			VLE		Cloud	Cloud +
Internal		External (staff)		External (registered)		Public

Traditional	Independent & personalised learning	Pupils teach
Sage on the stage	Collaborative resource designer & Guide on the side	Co-learner

Case Study 4

TeachMeet

Google Docs

4-11 primary
Passionate ICT Coordinator
& supportive Head Teacher

Extend → Transform

Increased Digital Leaders' confidence (and status)

Helps ICT Coordinator (and other staff)

Raised profile of school

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Professional development

Support			Extend			Transform
Desktop		Laptop		Tablet		Tablet +
'School'				Subsidised	Hybrid	Home
Lab	Group sets	Class sets	1:1 loan	1:1 owned	BYOx	BYO
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'Local' Servers			VLE		Cloud	Cloud +
Internal		External (staff)		External (registered)		Public

Formal CPD		Informal CPD	Learning organisation
Traditional		Independent & personalised learning	Pupils teach
Sage on the stage		Collaborative resource designer & Guide on the side	Co-learner

Tech support

Support			Extend			Transform
Desktop		Laptop		Tablet		Tablet +
'School'				Subsidised	Hybrid	Home
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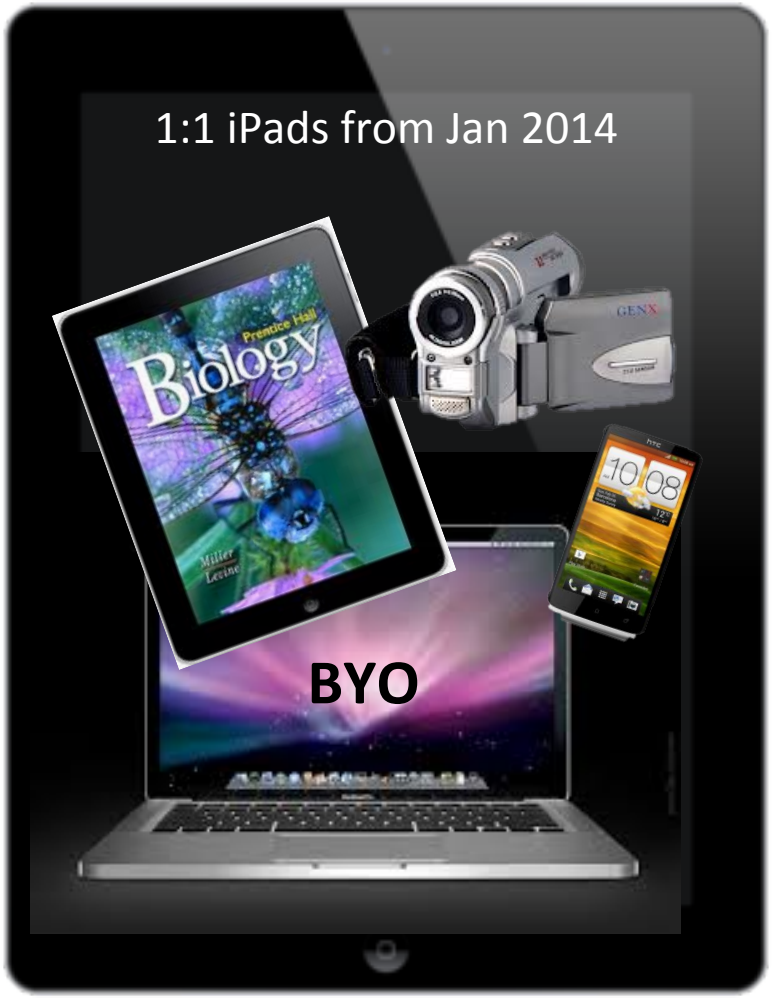
Traditional			Independent & personalised learning			Pupils teach
Sage on the stage			Collaborative resource designer & Guide on the side			Co-learner

Snapshot Study 3



K-12 Independent Girls School (Yr7 +)

Global citizens (critical thinkers)

Extend → Transform

How did that happen?

➪ From ‘Why?’ to ‘Why not?’

➪ Trust?

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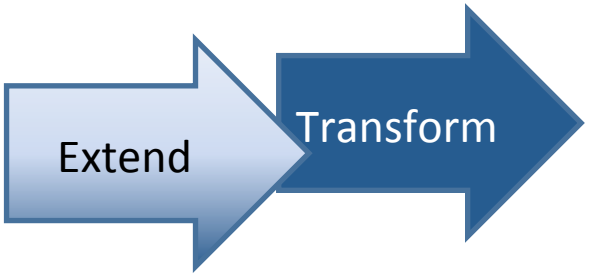
Snapshot Study 6

K - 6 state school

'literate, creative, culturally aware and socially conscious young adults and ready global citizens'



Sharing devices

Reflection & Peer review

Media makers

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Assessment

Support			Extend			Transform
Desktop		Laptop		Tablet		Tablet +
'School'			Subsidised	Hybrid		Home
Lab	Group sets	Class sets	1:1 loan	1:1 owned	BYOx	BYO
Wired		Wireless: closed		Wireless: controlled		Wireless: open
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Formal CPD		Informal CPD				Learning organisation
Traditional			Independent & personalised learning			Pupils teach
Sage on the stage			Collaborative resource designer & Guide on the side			Co-learner
Teacher assessment			Reflection			Peer assessment

What (curriculum focus)

Support			Extend			Transform
Desktop		Laptop		Tablet		Tablet +
'School'				Subsidised	Hybrid	Home
Lab	Group sets	Class sets	1:1 loan	1:1 owned	BYOx	BYO
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Formal CPD		Informal CPD				Learning organisation
Traditional			Independent & personalised learning			Pupils teach
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Teacher assessment			Reflection			Peer assessment
Product						Process

Vision

Support			Extend			Transform
Desktop		Laptop		Tablet		Tablet +
'School'				Subsidised	Hybrid	Home
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Traditional			Independent & personalised learning			Pupils teach
Sage on the stage			Collaborative resource designer & Guide on the side			Co-learner
Teacher assessment			Reflection			Peer assessment
Product						Process
None	Technology		Apple pie		21st Century	Educational

Where are PICT strategies heading?

Support			Extend			Transform
Desktop		Laptop		Tablet		Tablet +
'School'			Subsidised	Hybrid		Home
Lab	Group sets	Class sets	1:1 loan	1:1 owned	BYOx	BYO
Wired		Wireless: closed		Wireless: controlled		Wireless: open
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Support					
Desktop		Laptop			
'School'					
Lab	Group sets	Class sets			
Wired		Wireless: closed			
'Learning technology'					
'Local' Servers					
Internal		External (staff)			
ICT teachers		Dedicated tech			
Formal CPD		Informa			
Traditional					
Sage on the stage					
Teacher assessment					
Product					
School to home		Hidden	Recognised	Valued	Impacting
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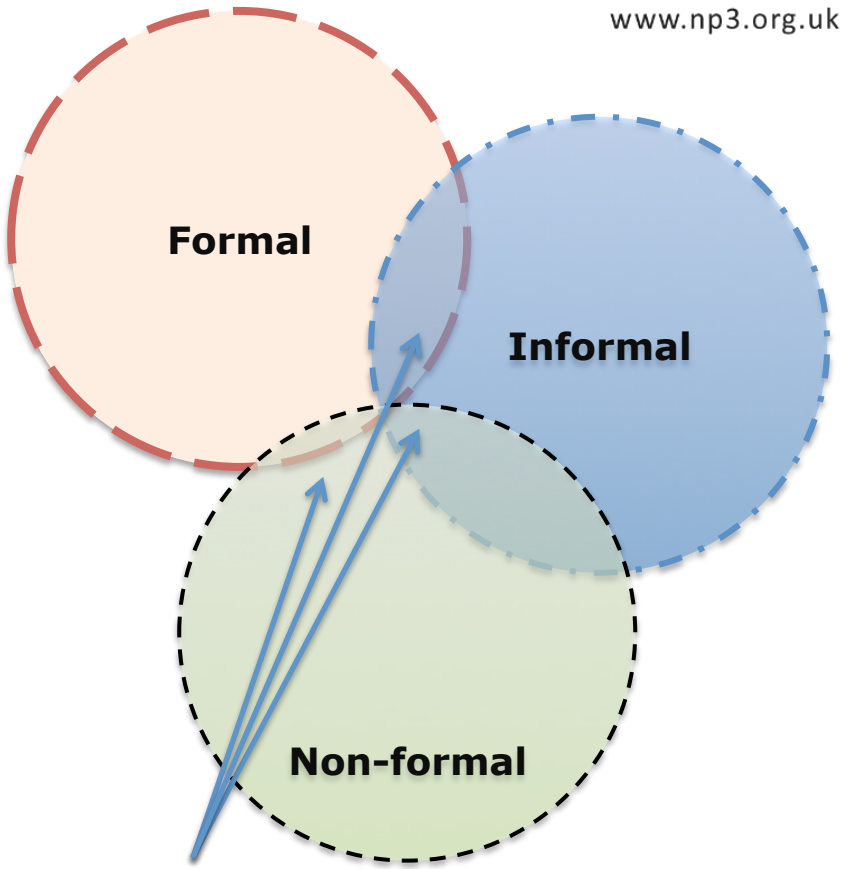
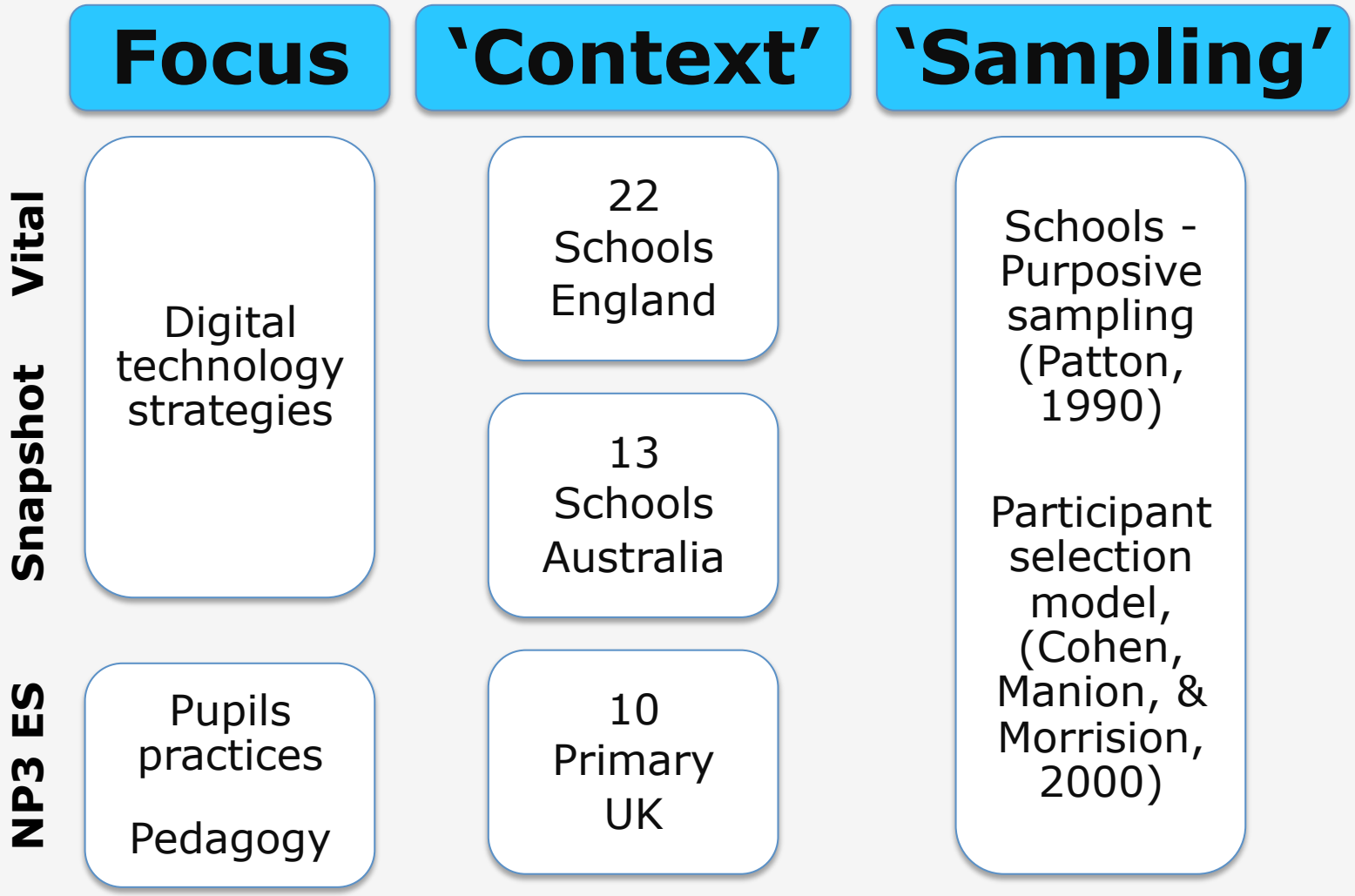


Potential 'practice' knowledge overlaps

Focus, 'Context' & 'Sampling'



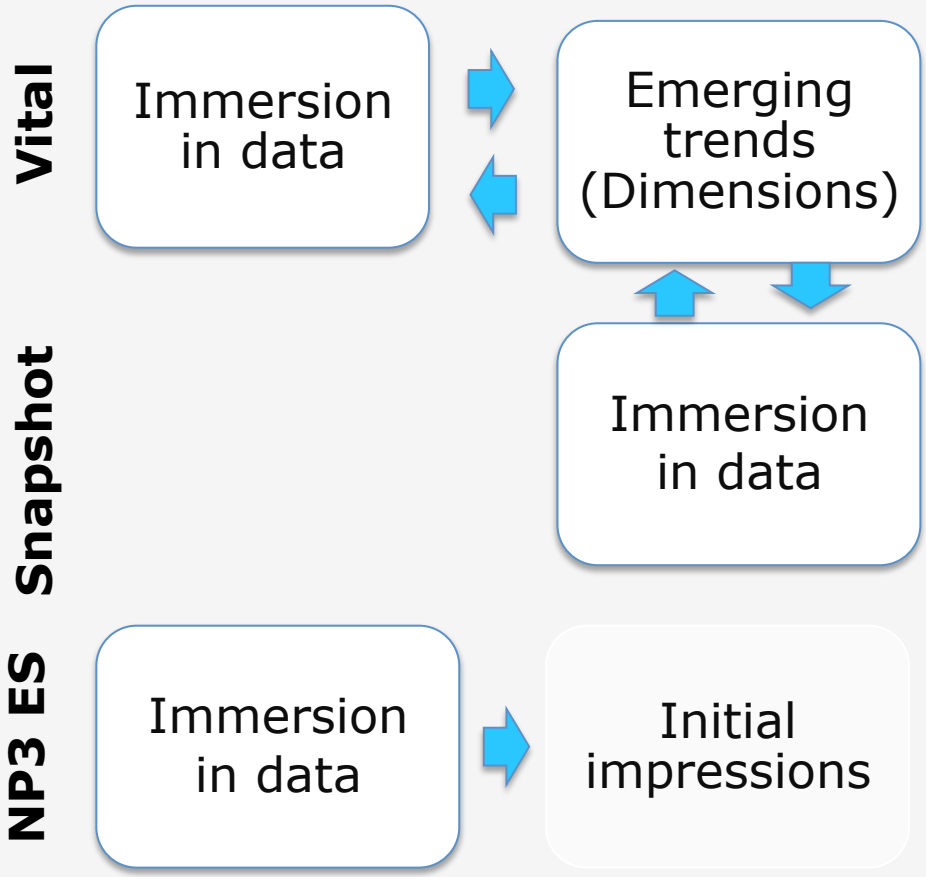
From description to explanation (theory)

Data collection

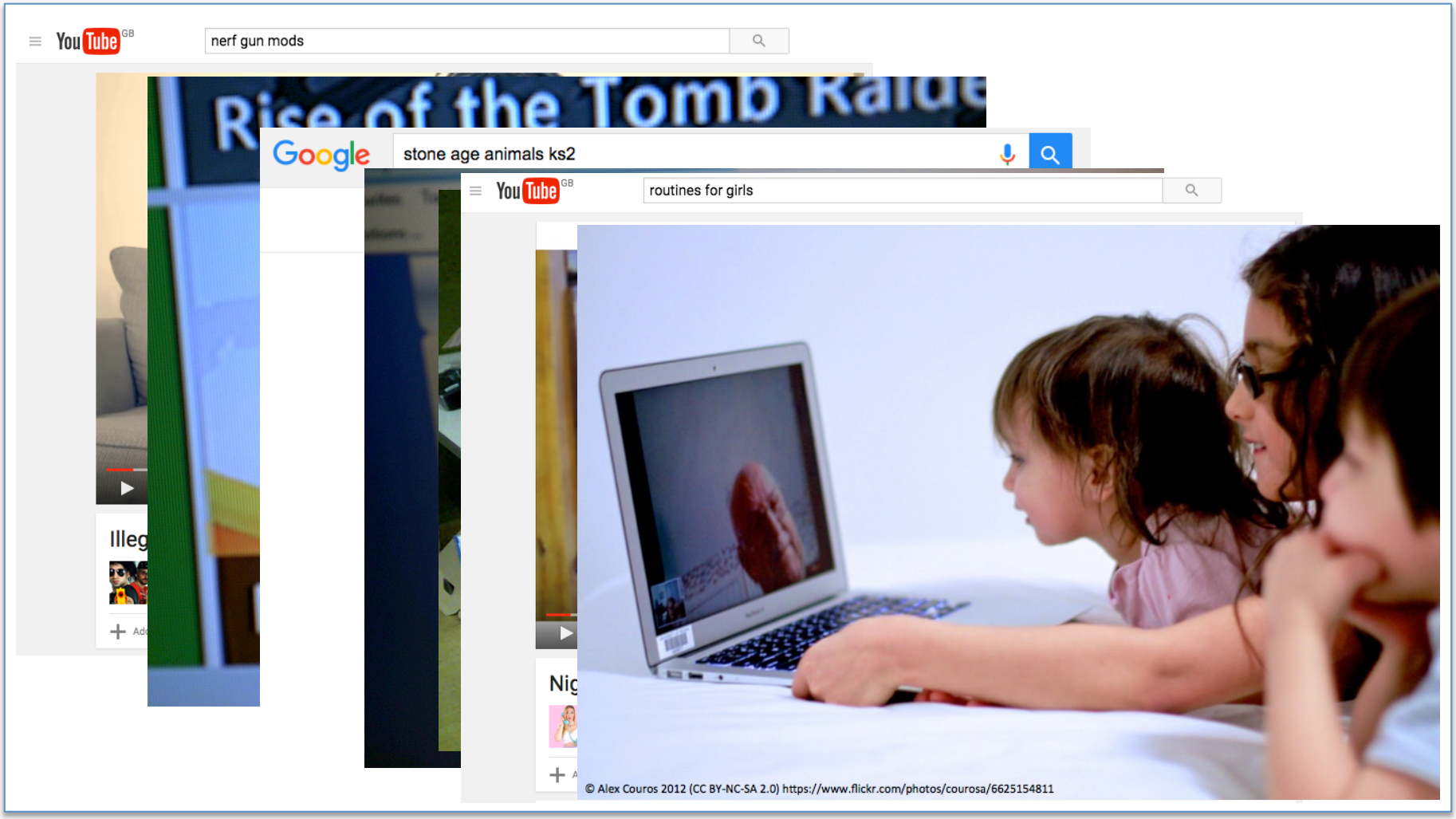
	Pre	Day 1	Between	Day 2
Vital	• Consent • Questionnaires	• SMT interview • T + P briefings • Class A: Int, Obs, Debrief, Group Int	• T + P portfolios	• Portfolio interviews • Class B (as Class A) • ICT Coord interview
Snapshot	• Consent • Questionnaires	• SMT Interview • Carer interview • ICT Coord Interview • Class A: Int, Obs, Debrief, Group Int		
NP3 ES	• Consent	• SMT interview • Tour • C + P briefings • Class A: Int, Obs, Debrief, Group Int	• C + P logs • Questionnaires	• Log interviews • Class B (as Class A) • ICT Coord interview • Other Teachers Ints

Data analysis

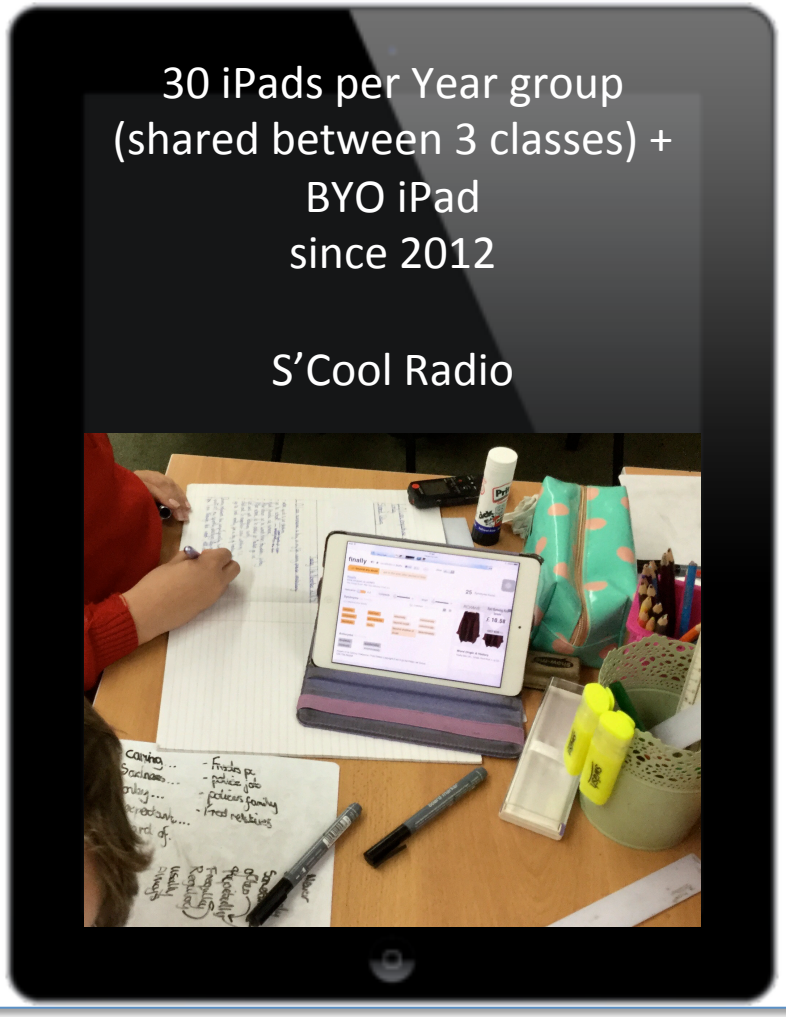
Emergent Themes Analysis (ETA) Wong and Blanford (2002)



Pupils' 'home' use

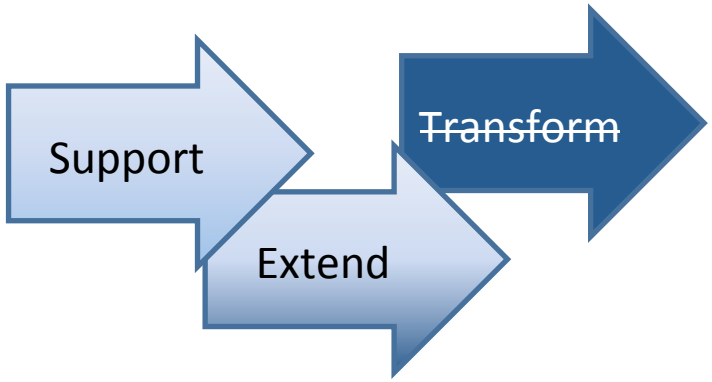


NP³ Exploratory Study 5



State junior school (Yrs 3 to 6)

Unite – Inspire - Excel

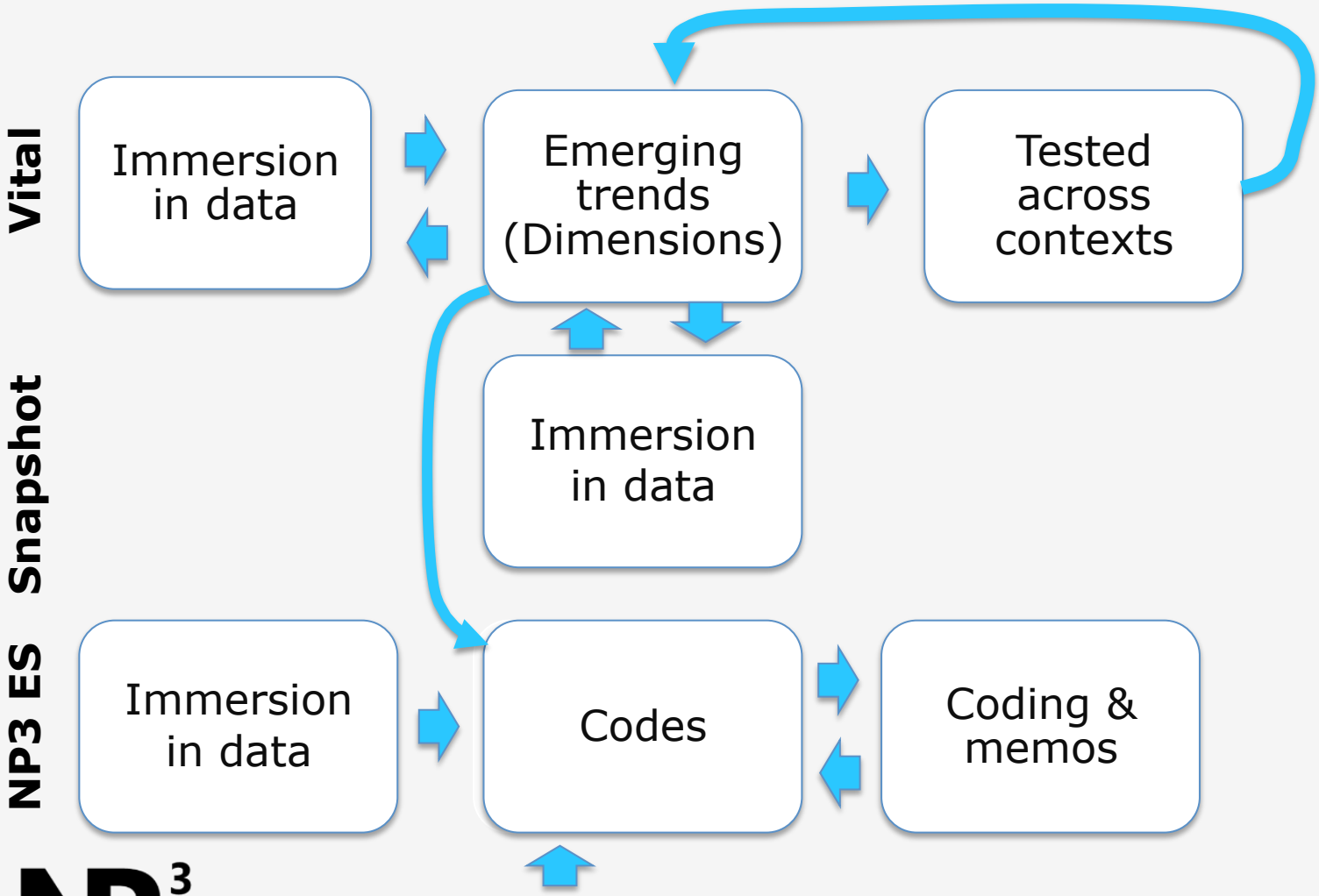


"Scores on doors"

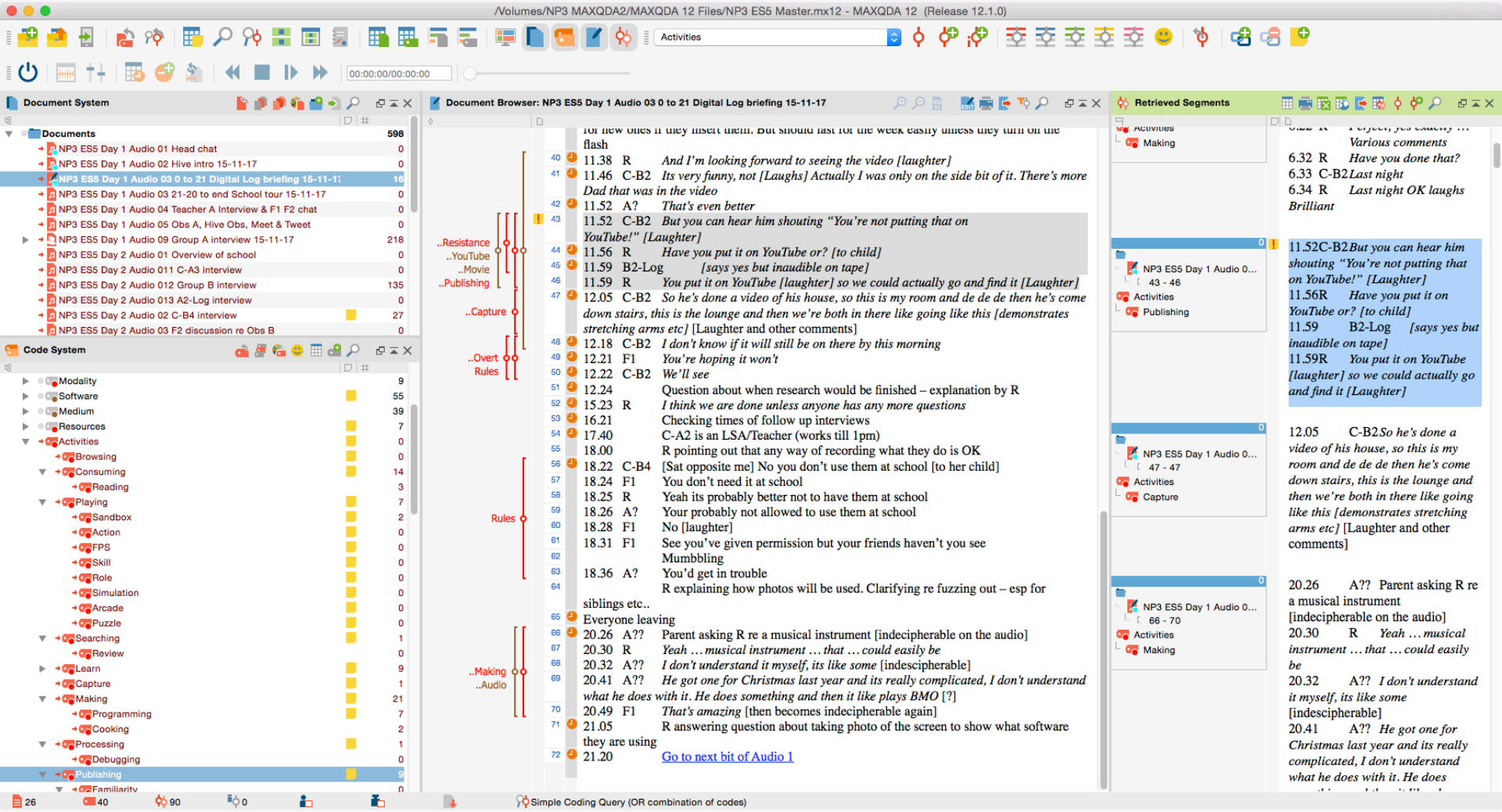
Ofsted paper trail

Staff development - priorities

Data analysis



MAXQDA



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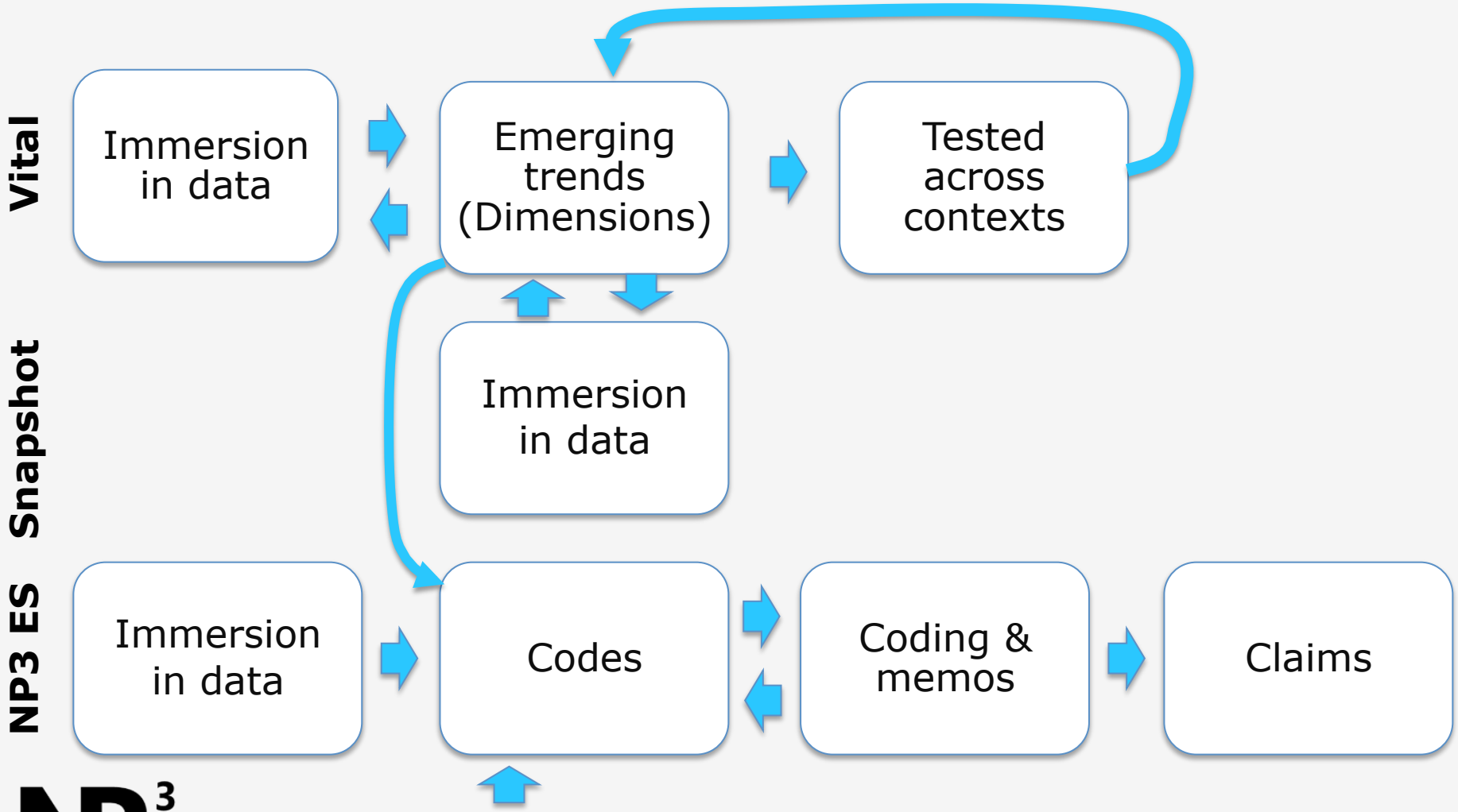
Interpretation



Discussion

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